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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/712,925	11/16/2000	Shuji Ono	3562-0108P	2972

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EXAMINER

MISLEH, JUSTIN P

ART UNIT	PAPER NUMBER
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2622

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	04/25/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 04/25/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No. 09/712,925	Applicant(s) ONO, SHUJI	
	Examiner Justin P. Misleh	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 32 is/are pending in the application.
- 4a) Of the above claim(s) 11 - 13, 15 - 21, 27 - 29, 31, and 32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 10, 14, 22 - 26, and 30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 November 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3 January 2007 has been entered.

Response to Arguments

2. Applicant's arguments filed 3 January 2007 have been fully considered but they are not persuasive.
3. Applicant argues, "Lyons does NOT teach or suggest limiting the depth range."
4. The Examiner respectfully disagrees with Applicant's position. In the Final Rejection (1 November 2006), the Examiner relied upon Lyons' figure 11 and column 11 (line 61) – column 12 (line 20) to teach limiting the depth range. In the cited portion, Lyons' states, "the zoom lens 65 is set to a narrow-angle field of view."
5. In the camera art, depth of field (depth range) generally known as the range of sharp focus in a photograph. Essentially, it is the nearest to the farthest object that you can expect to have sharp focus in your scene. Depth of field is controlled by at least 3 factors: the camera's iris (aperture), lens focal length (narrow-angle vs. wide-angle settings), and the distance of the subject from the camera. Using larger apertures, narrow-angled lenses (longer focal lengths),

Art Unit: 2622

and decreasing the distance between your subject and the camera will al decrease the depth of field. Therefore, it is clear Lyons discloses limiting the depth range.

6. Applicant additionally argues, “Lyons does NOT teach or suggest extracting a partial image that contains objects only in a limited depth range set by a range setting unit from the original image data input.”

7. The Examiner respectfully relied on Anderson for this feature.

8. However, Applicant additionally argues, “Anderson does NOT teach or suggest extracting a partial image that contains objects only in a limited depth range set by a range setting unit from original image data input.”

9. The Examiner respectfully disagrees with Applicant’s position. Anderson teach, as shown in figures 1, 3A, 3B, 4B, an image processing apparatus including a range setting unit and an image extracting unit for extracting said main subject (e.g., 504) from among a plurality of objects (e.g., 502, 508, and 506) from within the set searching range (500). Anderson further teaches, as shown in figure 7 and as stated in column 8 (line 1) – column 9 (line 57), extracting the main subject (504) from the image data (500) based on depth distribution information (see figure 6A) indicating a distance to each of said plurality of objects included in said image data (see column 8, lines 1 – 13). Therefore, it is clear Anderson teaches extracting a partial image that contains objects only in a limited depth range set by a range setting unit from original image data input.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. **Claims 1 – 3, 5 – 10, 14, 22 – 26, and 30** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lyons (US 6 734 911 B1) in view of Anderson (US 7 106 376 B1).

The Examiner believes independent Claims 1 and 22 are corresponding apparatus and method claims, respectively. Accordingly, they will be rejected together.

12. For **Claims 1 and 22**, Lyons discloses, as shown in figures 1A, 2A, 2B, 3A, 4A, 5A, 7A, 9, 11, and 12, an image processing apparatus (14 – figure 1A), comprising:

an image data input unit (17) for inputting image data (28) of a plurality of objects (21, 21a, 22, and 23) including a main subject (21);

a range setting unit (15) for restricting a searching range in the depth direction (“narrow-angle field of view”; see column 11, line 61 – column 12, line 20; Lyons clearly shows that the search range is restricted to a single predetermined distance from the image data input unit to the plurality of objects.) for searching said main subject (21) from the plurality of objects (21, 21a, 22, and 23) using the input image data (28); and

a partial image extracting unit (15/222) for extracting a partial image (“central region 26”) including said main subject (21) from said image data, a depth direction of said partial image being restricted to said searching range set by said range setting unit (see column 7, lines 55 – 65 and column 8, line 11 – 22).

While Lyons discloses restricting the searching range to a single predetermined distance in the depth direction for search a main subject from the plurality of objects; Lyons is silent with respect to extracting the main subject from the image data based on depth distribution information indicating a distance to each of said plurality of objects included in said image data.

On the other hand, Anderson also discloses an image processing apparatus including a range setting unit and an image extracting unit for extracting said main subject from within the set searching range. Specifically, Anderson teach, as shown in figures 1, 3A, 3B, 4B, an image processing apparatus including a range setting unit and an image extracting unit for extracting said main subject (e.g., 504) from among a plurality of objects (e.g., 502, 508, and 506) from within the set searching range (500). Anderson further teaches, as shown in figure 7 and as stated in column 8 (line 1) – column 9 (line 57), extracting the main subject (504) from the image data (500) based on depth distribution information (see figure 6A) indicating a distance to each of said plurality of objects included in said image data (see column 8, lines 1 – 13).

At the time invention was made, it would have been obvious to one with ordinary skill in the art to have included the extracting the main subject from the image data based on depth distribution information indicating a distance to each of said plurality of objects included in said image data (as taught by Anderson) in the image processing apparatus (disclosed by Lyons) for the advantage of *reducing undesirable image characteristics and improve image quality* (see column 1, lines 61 and 62).

13. As for **Claim 2**, Lyons discloses, as shown in figure 1A, wherein said image data input unit comprises a means for inputting a parallax image (“different focal lengths in the radial and tangential planes”; see column 5, lines 53 – 57), which picks up an image of the plurality of

Art Unit: 2622

objects (21, 21a, 22, and 23) from a plurality of different perspectives, and the image processing apparatus (222) further comprises a depth distribution information receiving unit for receiving said depth distribution information based on said parallax image (28).

14. As for **Claim 3**, Lyons discloses, as stated in columns 7 (lines 55 – 65) and 8 (lines 11 – 22) further comprising a main subject detecting unit (15/222) for detecting a main subject (21) from said partial image (“central region 26”) and receiving main subject information.

15. As for **Claims 5 and 23**, Lyons discloses, as shown in figures 11 and 12 and as stated in column 11 (line 61) – 12 (lines 20), said range setting unit (15) comprises a means for setting a first searching range (“narrow-angle field of view”) and a means for setting a second searching range (“wide-angle setting”), which differs from said first searching range;

said partial image extracting unit (15/222) comprises a means for extracting the part of the plurality of objects (21, 21a, 22, and 23) included in said first searching range (Step S125) as a partial image and a means for extracting the part the plurality of objects (21, 21a, 22, and 23) included in said second searching range (Step S123) as a second partial image (Steps S123 and S125 indicate the part of the plurality of objects (21, 21a, 22, and 23) is included in both searching ranges,); and

said main subject detecting unit (15/222) comprises a means for detecting (Step S122) said main subject (21) from said first partial image and a means for detecting (Step S122) said main subject (21) from said second partial image when said main subject is not detected from said first partial image (see figure 12).

16. As for **Claim 6**, Lyons discloses, as shown in figures 11 and 12, wherein said range setting unit (15) sets a predetermined depth length (“narrow-angle field of view”) as said first

Art Unit: 2622

searching range and sets the depth length contiguous (see column 12, lines 10 – 20) to said first searching range as said second searching range (“wide-angle”).

17. As for **Claims 7, 8, 24, and 25**, Lyons discloses, as shown in figures 11 and 12 and as stated in column 5 (lines 52 – 57), wherein said range setting unit (15) sets the depth length (“narrow-angle field of view”), which includes an independent object (21) existing at the nearest distance (i.e., zoomed-in), as said first searching range based on a depth distribution information (see column 5, lines 52 – 57) and sets the depth length contiguous to said first searching range as said second searching range (see figure 12).

18. As for **Claim 9**, Lyons discloses, as shown in figures 11 and 12, said range setting unit (15) sets a different said searching range (Step S123) when said main subject is not detected (Step S122) in said searching range set by said range setting unit (15); said partial image extracting unit extracts again (Steps S124) said partial image; and detects again said main subject.

19. As for **Claims 10 and 26**, Lyons discloses, as shown in figures 11 and 12 and as stated in column 11 (line 61) – 12 (lines 20), wherein said image data input unit is an image capturing unit (17/51) for picking up an image of the plurality of objects (21, 21a, 22, and 23), comprising: a photographic condition setting unit (67) for setting a photographic condition (zoom condition) based on said main subject information; and an image capturing control unit for controlling imaging by said image capturing unit based on said photographic condition (see figure 12).

20. As for **Claims 14 and 30**, Lyons inherently discloses wherein said image data input unit is an image capturing unit, which captures an image of said object based on a photographic

Art Unit: 2622

timing signal. However, Lyons is silent with respect to setting a photographic timing condition relating to the main subject, wherein said photographic timing is predetermined and stored.

However, Official Notice (MPEP § 2144.03) is taken that both the concepts and advantages of providing a timing condition storing unit for storing a predetermined photographic timing condition relating to said main subject; and a timing signal output unit for outputting said photographic timing signal to said image capturing unit when said main subject satisfies said photographic timing condition are well known and expected in the art. At the time the invention was made, it would have been obvious to one with ordinary skill in the art to have a timing condition storing unit for storing a predetermined photographic timing condition relating to said main subject; and a timing signal output unit for outputting said photographic timing signal to said image capturing unit when said main subject satisfies said photographic timing condition for the advantage *optimizing exposure and dynamic range of the main subject*.

21. **Claim 4** is rejected under 35 U.S.C. 103(a) as being unpatentable over Lyons in view of Anderson in further view of Hanna et al. (US 6 714 665 B1).

22. As for **Claim 4**, Lyons (as modified by Anderson) discloses a main subject detecting unit (15/222) for detecting a main subject (21) from said partial image (“central region 26”) and receiving main subject information.

However, Lyons (as modified by Anderson) does not disclose a distinctive parts detecting unit for detecting from said partial image, a distinctive part, which should be included in said main subject; and an information receiving unit for receiving said main subject information based on the position of said distinctive part detected by said distinctive parts detecting unit.

Art Unit: 2622

On the other hand, Hanna et al. also disclose an image processing apparatus including an image data input unit, a range setting unit, and a partial image extracting unit. More specifically, Hanna et al. teach, as shown in figures 1A and 1B, a distinctive parts detecting unit (computer 20) for detecting from said partial image (NFOV camera 14), a distinctive part (“user’s eye” – see figure 1B), which should be included in said main subject; and an information receiving unit (18) for receiving said main subject information based on the position of said distinctive part detected by said distinctive parts detecting unit (see column 5, lines 40 – 51 and column 7, lines 17 – 30).

As stated in column 1 (lines 50 – 53) of Hanna et al., at the time the invention was made, it would have been obvious to one with ordinary skill in the art to have included a distinctive parts detecting unit and an information receiving unit (as taught by Hanna et al.) in the image processing apparatus (disclosed by Lyons – as modified by Anderson), for the advantage “identifying objects of individuals in a passive way that is both fast and accurate.”

Conclusion

23. All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 2622

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

24. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Justin P Misleh whose telephone number is 571.272.7313. The Examiner can normally be reached on Monday through Friday from 8:00 AM to 5:00 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Vivek Srivastava can be reached on 571.272.7304. The fax phone number for the organization where this application or proceeding is assigned is 571.273.8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JPM
April 13, 2007



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